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Cooperative Economic Insect Report

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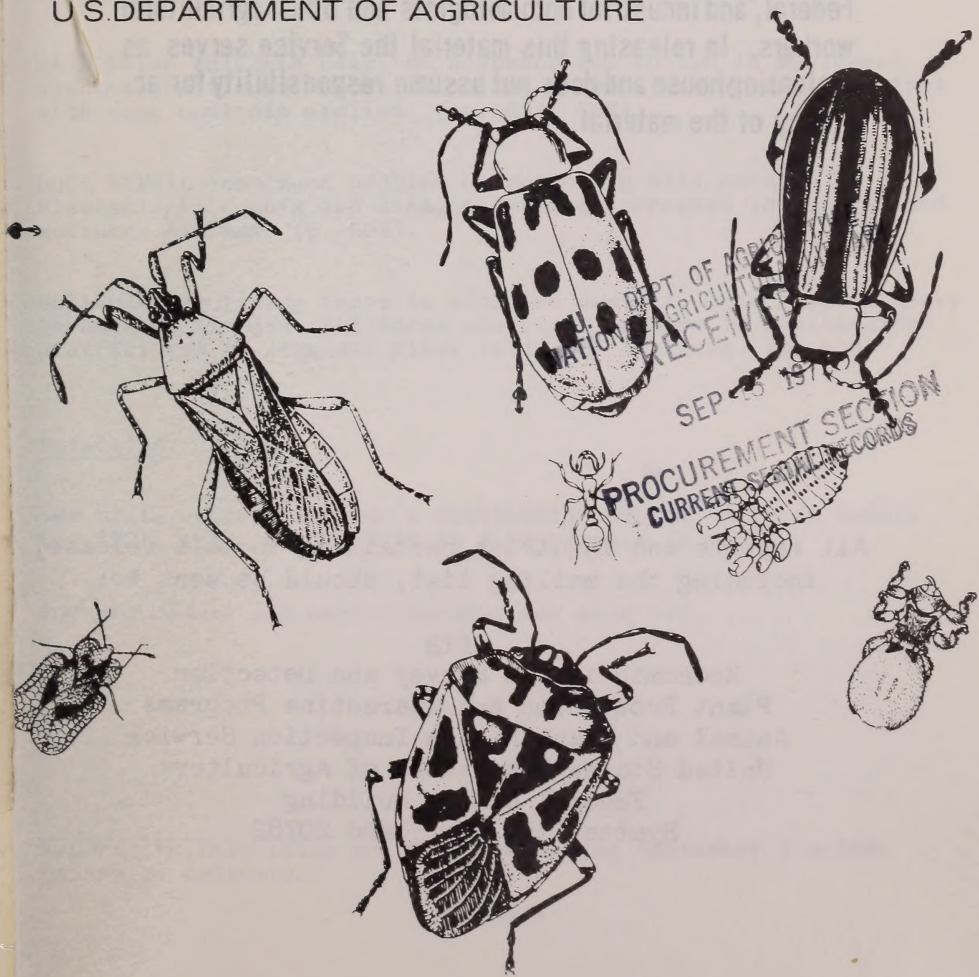

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The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Service serves as a clearing house and does not assume responsibility for accuracy of the material.

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HIGHLIGHTS

Curren Conditions

CORN EARWORM adults increased on Virginia Eastern Shore, growers advised to follow recommended treatment schedules. Larvae heavy on late soybeans in North Carolina, feeding on pods in southwestern Alabama. (p. 597).

CORN ROOTWORMS heavier in Nebraska than in 1971. (p. 598).

BANDEDWING WHITEFLY heavy on soybeans and cotton in southwest Alabama; continued threat to cotton in many areas of Mississippi with some controls applied. (pp. 601, 602).

BOLL WEEVIL continued problem on cotton in hill section of Mississippi; counts and damaged squares increased in central and northern Alabama. (p. 601).

BOLLWORM egg laying heavy in southern Georgia, moth flights heavy throughout Alabama. Bollworms continued problem in southeastern district and in Arkansas River Valley of Arkansas. (p. 602).

Detection

New State records include a CHRYSOMELID BEETLE in South Dakota (p. 599), and a SPIDER MITE in Pennsylvania (p. 604).

For new county and parish records see page 610.

Reports in this issue are for week ending September 1 unless otherwise indicated.

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NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

SEPTEMBER 1972

The National Weather Service's 30-day outlook for September is for temperatures to average below seasonal normals across the southern half of the Nation except for near to above normal in California. Above normal temperatures are also expected across the northern third of the Nation. In unspecified areas near normal temperatures are in prospect. Precipitation is expected to exceed normal over the Pacific coast, the Great Basin, Texas, and the south Atlantic coast. Subnormal totals are called for over the northeastern quarter of the Nation. Elsewhere near normal precipitation is indicated.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING SEPTEMBER 4

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

PRECIPITATION: Scattered thunderstorms occurred along the eastern slopes of the southern Rocky Mountains Monday, August 28. Heavier showers fell along the Atlantic coast from Virginia to Florida. Savannah, Georgia, received 4.14 inches in 6 hours early Tuesday. Tropical storm Gwen, about 300 miles south-southwest of San Diego, with winds near the center gusting to 60 m.p.h., brought showers and thunderstorms to southern California. Heavier, local showers fell in the mountains in the Southwest. Heavy showers continued in the East Wednesday. Orlando, Florida, received 3.26 inches of rain Wednesday afternoon and early evening. A cold front moved into the northern Great Plains by midweek. It set off numerous showers and thunderstorms as it moved across the central Great Weather of the week continued on page 610.

ARMYWORM (Pseudaletia unipuncta) - GEORGIA - Moderate in Coastal Bermuda grass pastures in Cook, Schley, and Tift Counties. (Smith et al.). ALABAMA - Full-grown larvae heavy in Bermuda grass lawn established July 15 in Blount County. (McQueen).

CORN EARWORM (Heliothis zea) - DELAWARE - Adults increased in blacklight traps, averaged 5 per night for 5 locations in Sussex County. Highest counts in southwestern area. (Burbutis, Kelsey). VIRGINIA - Adults still light but increased abruptly; 15 taken night of August 28, and 23 taken August 29 in Accomack and Northampton Counties. Growers of fall snap beans, tomatoes, and other susceptible crops advised to follow 5 to 7-day schedule, preferably 5 days, during this period and to keep close check on soybeans and watch for cut pods. (Hofmaster). KENTUCKY - Larvae averaged less than one per ear of corn in Union County. (Barnett). NORTH CAROLINA - Early instar larvae very heavy in many late soybean fields. In 3 of 10 soybean fields along State Highway 11 in Duplin County, 8 larvae per row foot noted. In Columbus and Bladen Counties, 2 larvae per row foot seen. (Hunt).

GEORGIA - H. zea light to heavy across peanut belt. Ranged light to very heavy on soybeans in southern area. (French et al.). FLORIDA - Averaged less than 1 late-instar larva per row foot of soybeans at Newberry, Alachua County. (Strayer). ALABAMA - Present to some degree in all of 40 soybean fields surveyed in Mobile, Baldwin, and Escambia Counties. Larvae heavy, 7-12 per 6 row feet and feeding on pods in Baldwin County field. Ranged 1-4 per 10 row feet in many other fields. Moth flights and egg laying very heavy in these 3 counties. (Kilpatrick et al.). MISSISSIPPI - Averaged 2 per 10 heads in sorghum grown for ensilage in Lowndes and Noxubee Counties. In soybeans, averaged 1 per 3 row feet in Noxubee County. Heavy enough in several fields in Coahoma County to cause damage and justify controls. (Robinson). KANSAS - Percent corn ears damaged by county: Lane 0-20 (2 fields); Trego 20-30 (2 fields); Logan 4-32 (3 fields); Sheridan 8-84 (3 fields); Thomas 4-24 (2 fields); Rawlins 0-20 (2 fields); Pottawatomie 30-95 (3 fields). (Bell).

CORN LEAF APHID (Rhopalosiphum maidis) - KANSAS - Heavy in whorls in some fields of late-planted (preboot) sorghum in Reno, Stafford, and Rice Counties. Reddening of terminal leaves seen in some infested fields. (Bell). NEW HAMPSHIRE - Continued problem on sweet corn where controls not applied. (Bowman, Aug. 25). MAINE - Numerous in few cornfields in State. Parasites and fungus disease reduced most populations. (Gall).

GREENBUG (Schizaphis graminum) - NEBRASKA - None seen in 3 grain sorghum fields checked in Dodge and Burt Counties. Parasitism now 100 percent, occasional mummies still seen on plants. (Berogan). KANSAS - Surveys negative on sorghum in Butler, Chautauqua, Harvey, Sumner, Sedgwick, Lane, Ness, Trego, Logan, Sheridan, Rawlins, and Cheyenne Counties. (Bell). TEXAS - Activity heavy in isolated field of grain sorghum in Martin County in Trans-Pecos area. Counts ranged 2,000-7,000 per plant on individual plants. In most other areas, activity very light on grain sorghum. (Green). NEW MEXICO - Light, ranged 2-3 per leaf, on grain sorghum at Roswell, Chaves County. (Mathews). ARIZONA - Spotty on sorghum plantings in Cochise County; predators abundant. (Kozloski).

POTATO LEAFHOPPER (Empoasca fabae) - VIRGINIA - Adults ranged 0-45 per 50 sweeps in peanuts in Prince George and Sussex Counties. Nymphs scarce. (Allen).

SPOTTED ALFALFA APHID (Therioaphis maculata) - MISSOURI - Populations in southwest and south-central areas ranged 0-1,500 per 10 sweeps. Yellowing of alfalfa evident in fields recently harvested and without rain. (Munson).

CORN, SORGHUM, SUGARCANE

CORN ROOTWORMS (Diabrotica spp.) - NEBRASKA - D. virgifera (western corn rootworm) and D. longicornis (northern corn rootworm) ranged 0-12 (averaged 5) per plant in 9 cornfields in Dodge, Burt, and Thurston Counties. Populations heavier statewide than in 1971. (Berogan). MICHIGAN - D. virgifera adults collected in field corn by R. Ling August 22 at Assyria Township, Barry County; from sweet corn silks August 25 by B. Peters in Kent County. Determined by R.J. Sauer. Taken on field corn by D. Kaiser August 25 at Danby Township, Ionia County, determined by R.F. Ruppel; on field corn August 31 by M. Sutherland at Oneida Township, Eaton County, determined by J.H. Newman; on field corn August 29 by F. Henningsen near Mendon, St. Joseph County, determined by R.F. Ruppel. These are new county records. D. virgifera appears widely scattered in southern areas, increasing problems expected. (Sauer et al.).

NEW HAMPSHIRE - D. longicornis abundant on corn near Claremont, Sullivan County; "goosenecking" severe. (Bowman, Aug. 25). KENTUCKY - Adults of D. longicornis and D. undecimpunctata howardi (southern corn rootworm) averaged 0.5 per corn ear in Union County. All surveys for D. virgifera negative to date. (Barnett).

RICE WEEVIL (Sitophilus oryzae) - MISSISSIPPI - Averaged 2 per 10 heads in sorghum grown for ensilage in Lowndes and Noxubee Counties. (Robinson).

EUROPEAN CORN BORER (Ostrinia nubilalis) - MAINE - Infestation ranged 0-6 percent in corn; heavier infestations rare. Infestation 75 percent in small field of sweet corn in Orono area, Penobscot County. (Gall). NEW HAMPSHIRE - First-brood adults active; little damage to sweet corn observed. (Bowman, Aug. 25). NEW YORK - Second-brood expected to be serious on untreated corn. Moth flights heavy; late sweet corn should be protected. At Geneva, Ontario County, 59 moths taken during period August 19-25. (N.Y. Wkly. Rpt.). DELAWARE - Adults increased in blacklight traps, averaged 22 per night for 5 locations in Sussex County. (Burbutis, Kelsey). NORTH CAROLINA - Lodging occurred in some fields throughout State. Lodging of more than 5 percent of stalks rare. Counts of 300+ per 100 plants in 2 Northampton County fields. (Long, Hunt).

ALABAMA - Larvae 2-10 and pupae 1-3 per stalk in maturing corn in 0.5 acre of commercial research plot of corn at Atmore, Escambia County. Several moths seen in other areas of county. (Knowles et al.). KANSAS - Third and fourth-instar second-generation larvae infested 5-20 percent of stalks of early planted corn (hard dough stage, 3 fields) and 90 percent of stalks in late-planted field (milk stage) in Pottawatomie County. Percent infested stalks by

county (2-3 fields per county): Trego 16-32; Logan 0-4; Sheridan 8-52; Thomas 0-20; and Cheyenne 0-4. Trego County is a new county record. Specimens collected and determined by M. Shuman. (Bell).

FALL ARMYWORM (Spodoptera frugiperda) - ALABAMA - First-instar to full-grown larvae heavy, damaged young corn, grain sorghum, and mixed Sudan and Sudex plantings in all fields examined in Baldwin and Escambia Counties. (Knowles et al.).

SORGHUM WEBWORM (Celama sorghiella) - MISSISSIPPI - Averaged 10 per 10 heads in sorghum grown for ensilage in Lowndes and Noxubee Counties. (Robinson).

WESTERN BEAN CUTWORM (Loxagrotis albicosta) - KANSAS - Third and mostly fourth-instar larvae still found in some corn in some west-central and northwest counties. Percent infestation by county: Logan 0-80; Sheridan 0-8; Thomas 24-48; Rawlins 0-44; and Cheyenne 0-12. (Bell).

CONCHUELA (Chlorochroa ligata) - NEW MEXICO - Heavy on sweet corn in Rio Arriba County. Damage heavy in one field. (N.M. Coop. Rpt.).

SORGHUM MIDGE (Contarinia sorghicola) - TEXAS - Midge numbers continued to increase; 10 of 11 counties showed increased emergence during week ending August 17. (McIntyre).

BANKS GRASS MITE (Oligonychus pratensis) - TEXAS - Moderate to light on grain sorghum in El Paso and Pecos Valley areas of Trans-Pecos area. Recent rain and cool night temperatures slowed activity in area. Light to moderate infestations reported from most counties on South Plains week ending August 17. Current infestations spotted in fields with small colonies found on most leaves within infested area. (Neeb, McIntyre).

SMALL GRAINS

HESSIAN FLY (Mayetiola destructor) - MONTANA - Infestation ranged 1-2 percent in 20,000 acres of wheat, including Durham, in Plentywood area, Sheridan County. No winter wheat within 60 miles. (Pratt).

TURF, PASTURES, RANGELAND

FALL ARMYWORM (Spodoptera frugiperda) - MISSISSIPPI - Moderate to heavy in pastures in Amite, Madison, and Scott Counties. (Robinson).

A SOD WEBWORM (Pediasis mutablilis) - COLORADO - Adults ranged 5-10 per square yard on grasses in Fort Collins area, Larimer County. (Thatcher).

CHINCH BUG (Blissus leucopterus leucopterus) - NEW HAMPSHIRE - Completely destroyed some lawns in Durham area, Strafford County. (Bowman, Aug. 25).

A CHRYSOMELID BEETLE (Galeruca rudis) - SOUTH DAKOTA - Collected from lupine (Lupinus parviflorus) in North Cave Hills, Harding County, August 6, 1969. Collected and determined by E.U. Balsbaugh. This is a new State record. (Jones).

FORAGE LEGUMES

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Counts of 460 larvae per 100 sweeps taken in alfalfa at Yuma Valley and 800 per 100 sweeps taken at Gila Valley, Yuma County. (Ariz. Coop. Sur.). NEW MEXICO - Ranged 15-20 larvae per 25 sweeps in Chaves County alfalfa. Adult flights heavy. (N.M. Coop. Rpt.). NEVADA - Adults unusually heavy on forage crops in Lovelock area, Pershing County. (Stitt).

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Counts of 920 per 100 sweeps taken in alfalfa at Gila Valley, Yuma County. (Ariz. Coop. Sur.).

WESTERN YELLOWSTRIPED ARMYWORM (Spodoptera praefica) - WASHINGTON - Heavy in alfalfa in Pasco and Wallula area of Franklin and Walla Walla Counties. (Halfhill).

PEA APHID (Acyrthosiphon pisum) - OHIO - Population "explosions" occurred in many east-central area hay fields during recent hot, humid weather; increases in hay noted Statewide. Counts per sweep by county: Alfalfa - Guernsey 3.5, Holmes 20, Ashland 3-3.5, Coshocton slightly less than one; mixture of clover and timothy - Summit 4-6.5, Wayne 4.5, Morrow 1, Stark 2. Except in few cases, biological control not sufficient. (Fox).

ALFALFA WEEVIL (Hypera postica) - KENTUCKY - Average counts per square foot of alfalfa in Fayette County: August 3, larvae 2.7 and eggs 6.2; August 10, larvae 2.3 and eggs 15.2. (Barnett, Parr).

ALFALFA LEAF BLOTCH-MINER (Agromyza frontella) - MASSACHUSETTS - Infestations decreased sharply; less than 1 percent of leaflets infested in one Hampshire County semimature alfalfa field. (Jensen).

SOYBEANS

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Light to very heavy in south-central area. (Wood et al.). FLORIDA - Larvae decreased, averaged 2 per row foot of soybeans. Adults numerous in 35-acre field at Newberry, Alachua County. (Fla. Coop. Sur.). ALABAMA - Full-grown larvae light in most soybean fields examined in Mobile, Baldwin, and Escambia Counties. Heavy moth flights continued throughout Baldwin County. (Kilpatrick et al.).

GREEN CLOVERWORM (Plathypena scabra) - INDIANA - Larvae non-economic in most soybean fields in southern districts, averaged less than one per linear foot. Heavy in some fields, either alone or in conjunction with blister beetles; some fields treated. Parasitized specimens rare. (Edwards et al.).

SOYBEAN LOOPER (Pseudoplusia includens) - ALABAMA - This and Trichoplusia ni (cabbage looper) infested all of 40 soybean fields examined in Mobile, Baldwin, and Escambia Counties. Virus disease eleminated loopers in field near Atmore, Escambia County. Defoliation by loopers and other leaf feeders ranged 10-20 percent. Some growers started controls. (Kilpatrick et al.).

MEXICAN BEAN BEETLE (Epilachna varivestis) - VIRGINIA - Of 48 soybean fields checked in Middlesex, Isle of Wight, Prince George, Surry, Sussex, and Southampton Counties, four above economic threshold and four nearing economic threshold. This pest increases rapidly and should be checked often this time of year. (Allen et al.). INDIANA - Larvae ranged 16-48 per linear yard in untreated field in Jennings County. Controls applied in this county where no problem occurred since 1969. Early and middle-instar larvae most common, eggs occasional, pupae rare. (Meyer).

BANDEDWING WHITEFLY (Trialeurodes abutilonea) - ALABAMA - Nymphs and adults light to heavy in all of 30 soybean fields examined in Baldwin and Escambia Counties. Adult emergence general in both counties. One large field near Foley, Baldwin County, with several thousand adults clustering at tops of plants. Young nymphs ranged 200-500 per leaf on bottom sides of top leaves. These are new county records. (Turner et al.).

PEANUTS

CORN ROOTWORMS (Diabrotica spp.) - GEORGIA - Moderate to heavy in Lee and Terrell Counties. (Andrews, Locke). NORTH CAROLINA - Larvae of D. undecimpunctata howardi (southern corn rootworm) ranged 4-12 under each plant in 12 peanut fields in Northampton County. (Long, Hunt).

VELVETBEAN CATERPILLAR (Anticarsia gemmatalis) - GEORGIA - Adults and larvae heavy on peanuts in south-central areas. (Wood et al.).

TWOSPOTTED SPIDER MITE (Tetranychus urticae) - NORTH CAROLINA - Damage in Northampton County ranged from spots to one acre in size with advanced yellowing and dead leaves. Webbing noticeable in smaller spots (500 square feet) with thousands of mites per leaf. Damage occurred on about 20,000 acres in Halifax and Northampton Counties in 1971, about same expected for 1972. Resistance to chemical controls caused problems. (Long).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Punctured squares ranged 20-80 percent in northern Glasscock County. No activity reported in Martin, Midland, and Upton Counties. Activity increased rapidly in areas below the Caprock south of Lubbock and in south-central area. Populations ranged 16-24,000 per acre in Calhoun County prior to application of insecticides for diapausing weevil control. (Green). MISSISSIPPI - Continued problem in hill section where cotton still green and blooming. One 5-acre field in Noxubee County had average of 5 weevils per bloom in 20-bloom count. (Robinson). ALABAMA - With much cotton "cutting out" and reduction in squares along with continuing "hatchouts", weevils and percent damaged squares increased to 30-80 percent in many central and northern area fields. Weevil control especially to protect young bolls, continued throughout most of State. (McQueen). GEORGIA - General migration occurred over southern areas; 0-85 percent punctured squares, infestations low where controls continued. In Polk County, punctured squares averaged 9 percent, high of 42. (Womack, Stowe). TENNESSEE - Number of squares too low to make counts. Weevils continue to damage small bolls in late cotton. (Locke).

BOLLWORMS (Heliothis spp.) - TENNESSEE - Cotton not attractive to H. zea; controls not justified. (Locke). GEORGIA - Heliothis spp. oviposition still heavy, much boll damage in many southern area fields. Infestations predominately Heliothis virescens (tobacco budworm). (Womack). ALABAMA - Moth flights heavy throughout State; larval counts increased. Problem in numerous isolated fields where control schedules variable. (McQueen). MISSISSIPPI - Infestation by county: Coahoma, numerous in most green cotton; Madison, light to heavy in 2,600 acres; Rankin, moderate to heavy in few fields; Warren, light to moderate in 500 acres; Bolivar, larvae and egg laying moderate in 500 acres; Issaquena, egg laying heavy; Quitman, larval infestation ranged 4-6 percent with many eggs in 1,500 acres. (Robinson et al.).

ARKANSAS - H. virescens continued problem in 3 southeast counties and in upper Arkansas River Valley. In Ashley, Chicot, Desha, and Pope Counties, H. virescens comprised 58 percent of population; much lighter in Lincoln and Woodruff Counties. None found in small sample from Lonoke County. (Boyer). TEXAS - H. zea activity ranged light to heavy in Trans-Pecos area; light to moderate in El Paso County. In Reeves and Pecos Counties, eggs ranged 50-150 and larvae 4-12 per 100 terminals; 8-20 percent damaged squares. Some fields averaged less than 15 eggs per 100 terminals. Moths plentiful in most fields; laying eggs in upper plant terminals. Activity light to moderate in Glasscock, Reagan, Upton, Martin, and Midland Counties. Eggs ranged 3-20 per 100 terminals, larvae 3-6 per 100 plants; damaged squares and small bolls ranged 3-10 percent in most fields. (Neeb). NEW MEXICO - H. zea light in cotton in Chaves and Dona Ana Counties. (N.M. Coop. Rpt.).

CABBAGE LOOPER (Trichoplusia ni) - ARKANSAS - Heavy moth flights and egg deposition of this and Pseudoplusia includens (soybean looper) continued in many fields. Infestations occurred somewhat earlier than normal this year. Infestations appear to be more fieldwide rather than mainly on edges of fields as in past. (Boyer). ARIZONA - T. ni larvae heaviest on treated cotton at , Safford, Graham County; short staple cotton preferred host. (Ariz. Coop. Sur.).

COTTON LEAFPERFORATOR (Bucculatrix thurberiella) - ARIZONA - Problems occurred in some fields at Yuma, Yuma County. Insecticides changed. (Ariz. Coop. Sur.).

BANDEDWING WHITEFLY (Trialeurodes abutilonea) - ALABAMA - Nymphs and adults ranged light to heavy in maturing cotton field at Atmore, Escambia County; 10-100 adults clustering at tops of plants. (Knowles et al.). MISSISSIPPI - Remained threat to cotton in many areas. Some controls applied. Reports indicate more widespread in State than in 1971. (Robinson). ARKANSAS - Infestations increased slightly but generally lighter than in 1971. (Boyer).

TOBACCO

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - KENTUCKY - Adults averaged 2 per leaf on tobacco at one Fayette County location. (Barnett).

COLE CROPS

BEET ARMYWORM (Spodoptera exigua) - ARIZONA - Larvae ranged 5-15 per lettuce plant at Kansas Settlement, Cochise County. (Ariz. Coop. Sur.).

GENERAL VEGETABLES

SWEETPOTATO LEAF BEETLE (Typophorus nigritus viridicyaneus) - FLORIDA - Larvae ranged 1-25 per sweetpotato plant in field at Milton, Santa Rosa County. This species rarely reported from State. (Fla. Coop. Sur.).

HAWAII INSECT REPORT

Turf and Pasture - GRASS WEBWORM (Herpetogramma licarsisalis) larvae trace in 5 acres of Kikuyu grass at Kapahi, Kauai, compared with 23 per square foot 3 weeks ago. About 10 percent of larvae collected were parasitized by Eucelatoria armigera (a tachina fly). On Maui, larvae heavy in small Kikuyu grass pasture at Kaupakuloa; averaged 10.5 per square foot. Many larvae collected parasitized by Trathala flavo-orbitalis (an ichneumon wasp). (Sugawa, Ah Sam).

General Vegetables - TOMATO PINWORM (Keiferia lycopersicella) larvae heavy in 2 acres of tomato at Wailua, Kauai. About 50 percent of terminal shoots and young leaves heavily damaged; 15 percent of fruits light to moderately damaged. This pest apparently unaffected by repeated applications of recommended insecticides. (Sugawa).

Fruits and Nuts - Eggs and larvae of a SWALLOWTAIL BUTTERFLY (Papilio xuthus) moderate on various backyard citrus trees from Kapaa to Anahola, Kauai. This pest now common over most of island from Kekaha to Anahola. On Oahu, 5 of 22 eggs collected from young citrus terminals at Moanalua, Ewa Beach, and Ewa Plantation parasitized by Trichogramma sp. (Sugawa, Kumashiro, Otsuka). Larvae of LEAFMINER FLIES (Liriomyza spp.) light in 200-acre passion fruit farm at Kahului, Maui. Infestations only at trace levels in this farm in previous years. (Miyahira).

Forest and Shade Trees - Larvae of a NOCTUID MOTH (Melipotis indomita) moderate to heavy under bark of 15 kiawe trees in Pearl City, Oahu; 580 larvae collected in 2 man-hours. (Otsuka, Kumashiro).

Beneficial Insects - Nymphs and adults of a THRIPS (Liothrips urichi) moderate, 10-20 per foot-long terminal of Clidemia hirta, at Palolo and Waiahole Forest Reserves, Oahu. (Kashiwai, Otsuka). Larvae and adults of a GALL FLY (Procecidochares utilis) heavy on Maui pamakani (Eupatorium glandulosum) along roadsides at Haleakala elevation 6,000 feet, and Ulupalakua, elevation 2,000 feet, on Maui. (Miyahira et al.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (Laspeyresia pomonella) - WASHINGTON - In Yakima area of Yakima County, problems increased due to delayed timing of control applications. Controls satisfactory where applications well timed and effective materials used. (Gregorich).

APPLE MAGGOT (Rhagoletis pomonella) - NEW HAMPSHIRE - Adults laying eggs; controls applied. (Bowman, Aug. 25).

SAN JOSE SCALE (Quadraspidiotus perniciosus) - WASHINGTON - Crawlers general on apples despite dormant spray and 2 applications against crawlers in Yakima area, Yakima County. (Gregorich).

BLACK PECAN APHID (Tinocallis caryaefoliae) - TEXAS - Heavy on pecan trees in Nueces Canyon area of Edwards County. Light in Brazos and Burleson Counties. (Neeb, Green).

CITRUS

PURPLE SCALE (Lepidosaphes beckii) - FLORIDA - This species and Chrysomphalus aonidum (Florida red scale) severely infested all 650 Meyer lemon plants at nursery in Baker County. (Fla, Coop. Sur.).

ORNAMENTALS

A GEOMETRID MOTH (Coryphista meadii) - NEVADA - Larval infestations caused heavy damage to barberry in Reno and Sparks, Washoe County. (Bechtel).

A LACE BUG (Stephanitis takeyai) - PENNSYLVANIA - Adults heavy on one Pieris japonica plant at Lake Ariel, Wayne County. Determined by E.E. Simons. This is a new county record. (Andreychik, August 15).

EUROPEAN EARWIG (Forficula auricularia) - MICHIGAN - Several adults collected near residence in Benzonia, Beulah County by N. Sleeper. Determined by I.J. Cantrall. This is a new county record. (Sauer).

A SPIDER MITE (Eurytetranychus buxi) - PENNSYLVANIA - Adults collected on Buxus sp. in Harrisburg, Dauphin County, July 26 by R. Hill. Determined by R. Lehman. This is a new State record. (Hill).

FOREST AND SHADE TREES

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - ALABAMA - Two localized infestations seen on pine trees in Mobile and Conecuh Counties. Infestations followed lightning damage to one tree in Mobile County and trees along U.S. Highway I-65 near Evergreen, Conecuh County, following logging operation. (Kilpatrick et al.).

BLACK TURPENTINE BEETLE (Dendroctonus terebrans) - ALABAMA - Infested numerous pine trees on lawns and in timberland following damage by lightning, construction equipment, and other damage in Mobile and Baldwin Counties. (Kilpatrick, Turner).

PINE BUTTERFLY (Neophasia menapia) - OREGON - Adults uncommon throughout most of area in portions of Deschutes, Klamath, Lake, and Marion Counties. None seen along west slope below Santiam Pass, Marion County, where numerous past few years. (Westcott).

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - SOUTH DAKOTA - Larvae collected from Pinus ponderosa 3.5 miles west of Lemmon, Perkins County, June 6 by M.E. McKnight and A.D. Tagestad, and 3.5 miles north of Olsonville, Todd County, June 16 by M.E. McKnight and June 23 by J.D. Stein. Determined by J.D. Stein. These are new county records. (McKnight).

FALL WEBWORM (Hyphantria cunea) - VIRGINIA - Moderate to heavy in Mathews and Gloucester Counties, and moderate in Surry, Sussex, and Isle of Wight Counties on sourwood, persimmons, and pecans. (Allen, May). NEW MEXICO - Light to heavy on cottonwood, apple, and other shade trees. Many trees almost completely defoliated. (N.M. Coop. Rpt.).

AMERICAN DAGGER MOTH (Acronicta americana) - NEVADA - Larval infestations caused heavy damage to boxelder in Reno and Sparks, Washoe County. (Hilbig et al.).

ELM LEAF BEETLE (Pyrrhalta luteola) - ARKANSAS - Chinese elms in all areas, especially in northwest, show effects of heavy feeding. Practically all leaves brown. Infestations of this type for several consecutive years may result in loss of some trees. (Boyer).

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - CALIFORNIA - Infested Chinese elm trees at rate of 95 per limb at Poway, San Diego County. (Cal. Coop. Rpt.).

MAN AND ANIMALS

SCREWWORM (Cochliomyia hominivorax) - Total of 4,936 confirmed cases reported in continental U.S. during period August 20-26 as follows: Texas 4,700; New Mexico 63; Arizona 109; Oklahoma 64. Total of 593 cases confirmed in Mexico. Number of sterile flies released in U.S. this period totaled 179,468,000 as follows: Texas 155,378,000; New Mexico 4,910,000; Arizona 16,360,000; California 600,000; Oklahoma 2,080,000; Arkansas 140,000. Total of 24,780,000 sterile flies released in Mexico. (Anim. Health).

FACE FLY (Musca autumnalis) - OHIO - Heaviest in Coshocton and Tuscarawas Counties. Up to 40+ per face on Guernsey cattle, and up to 50+ per face on Herefords. Caused extreme annoyance to these animals, tearing and streaking common. (Fox). KENTUCKY - Ranged 10-15 per animal on cattle in Union County. Incidence of pinkeye higher than in past years. (Brown, Barnett). GEORGIA - Annoyed beef cattle in Meriwether County. This is a new county record and the southernmost occurrence in State to date. (Willis et al.).

HORN FLY (Haematobia irritans) - OHIO - Up to 200-500 per side on beef cattle in Tuscarawas and Carroll Counties. (Box). MISSISSIPPI - Moderate to heavy in 6 herds in Warren County; light to moderate on 200 cattle in Amite County; 150+ per head on 100 Hereford cattle in Oktibbeha County. (Robinson). TEXAS - Increased on cattle across Trans-Pecos area; ranged 100-500 per animal. Increased throughout Panhandle. Decreased on cattle in south central area. (Neeb et al.).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Heavy in southern counties. Annoyance to dairy cattle severe in Columbia County, light in Chippewa County. Annoyance to man heaviest in recent years in southern counties. (Wis. Ins. Sur.).

MOSQUITOES - RHODE ISLAND - Biting by Culex pipien pipiens heavy in Washington County. (Field). KENTUCKY - Mosquitoes increased along Ohio River; controls applied. (Barnett). MINNESOTA - Light trap catches of mosquitoes showed substantial decrease from preceding period, nuisance levels also decreased. Egg diapause beginning with shorter days. (Minn. Pest Rpt.). UTAH - Mosquitoes annoying in several Box Elder County communities from Perry through Fielding and at Locomotive Springs. Continued annoying in Allen Canyon and Randolph Meadows areas in Rich County. (Knowlton).

BENEFICIAL INSECTS

A LADY BEETLE (Stethorus picipes) - WASHINGTON - Increased generally on apples in Yakima area of Yakima County where Tetranychus mcDanieli (McDaniel spider mite) present. (Gregorich).

BRACONIDS (Aphidius spp.) - WASHINGTON - Very abundant in alfalfa infested with Acyrthosiphon pisum (pea aphid) in Royal Slope area of Grant County in Columbia Basin and in Pasco and Wallula area of Franklin and Walla Walla Counties. (Halfhill).

LACEWINGS (Chrysopa spp.) - WASHINGTON - C. californica and Chrysopa spp. abundant in fruit orchards around Wenatchee, Chelan County. (Anthon).

PHYTOSEIID MITES - WASHINGTON - Zetzellia mali and Metaseiulus occidentalis increased generally where Tetranychus mcdanieli (McDaniel spider mite) infested apples in Yakima area, Yakima County. (Gregorich).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

COMSTOCK MEALYBUG (Pseudococcus comstocki) - CALIFORNIA - Infested area enlarged to 71 city blocks in Delano, Kern County. All but one property occurs east of U.S. Highway 99. Mulberry only host recorded. (Cal. Coop. Rpt.).

GRASSHOPPERS - WISCONSIN - Populations increased, due mostly to heavier numbers of adults and to larger nymphs. Counts heaviest in southern Grant, southeastern Rock, and southwestern Walworth Counties. Mostly Melanoplus femurrubrum and concentrated in fence rows, along roadsides, on road surfaces, and in older or recently cut alfalfa fields. Ranged 15-45+ per square yard; feeding on crops minimal. Damage to soybeans and corn expected to increase. M. differentialis mostly adults in these areas; some severe damage to corn and related crops in few areas in western Dane County. About 2 per plant noted throughout field of field corn in Rock County; field of sweet corn in northern part of county treated. Grasshoppers heavy enough in field of dent corn in southern Grant County that marginal 5 rows brown. (Wis. Ins. Sur.). SOUTH DAKOTA - M. bivittatus (40 percent), M. differentialis (40 percent), and M. femurrubrum (20 percent) infested 80-acre alfalfa field near Sturgis, Meade County. Counts ranged 8-10 per square

yard in one-half of field, 15-20 per square yard in remainder. Controls applied. (Jones). NEBRASKA - Melanoplus spp. damaged border rows of corn, grain sorghum, and soybeans in Dodge, Burt, and Thurston Counties. Defoliated up to 80 percent of outer 4-6 rows in some cornfields. Ranged up to 20 per square yard in waste areas and roadside ditches. (Berogan). KANSAS - M. differentialis adults caused some foliar damage to some pines grown for Christmas trees in nursery in Pottawatomie County. (Bell). NEW MEXICO - Moderate in grain sorghum in Chaves County. (N.M. Coop. Rpt.).

JAPANESE BEETLE (Popillia japonica) - RHODE ISLAND - Active in many areas of Washington and Providence Counties. (King, Field). INDIANA - Adults trapped at several locations July 27 in Green and July 31 in Dubois Counties by R. Chandler. Determined by J.M. Kingsolver. These are first specimens taken in these counties and are to be considered as interceptions until evidence of infestation is found. (PP). IOWA - Adult trapped near Waterloo airport, Black Hawk County, by R. Larson July 28. Adult trapped near West Branch, Cedar County, by D.B. Showman August 3. Determined by J.L. Kingsolver. Black Hawk County collection is first time this pest trapped in State, and both are considered to be interceptions until evidence of infestation is found. (PP). MINNESOTA - Two beetles taken in 2 traps August 24 by S. Lentz; traps located in 2 railroad switching yards about 4 miles apart in Minneapolis, Hennepin County. Determined by J.M. Kingsolver. (Minn. Pest Rpt.). These will be considered as regulatory incidents until evidence of infestation is found. (PP).

PINK BOLLWORM (Pectinophora gossypiella) - TEXAS - Infested bolls ranged 5-25 percent across El Paso County; ranged 8-50 percent in Pecos and Reeves Counties, with few isolated fields having 65-80 percent infested bolls. Infested bolls ranged 3-8 percent in Glasscock, Midland, and Martin Counties. Moths taken in hexalure traps in Upton County ranged 15-51 per trap. (Neeb). NEW MEXICO - Generally light in cotton in southern Dona Ana County. (Hare). ARIZONA - Average boll infestations 6-8 percent in Yuma County cotton fields. Increased in Safford area with many more fields placed on spray schedule in Graham County. (Ariz. Coop. Sur.). CALIFORNIA - Single nonsterile moth taken in trap in Old River and one in Mettler Station, Kern County. This brings season's total to 7 nonsterile moth collections. Sterile drops continued at increased rate. (Cal. Coop. Rpt.).

WESTERN GRAPELEAF SKELETONIZER (Harrisinia brillians) - CALIFORNIA - Additional properties and blocks added to infestation in San Jose, Santa Clara County; now involves 121 city blocks. Previous infestations under treatment or survey in El Dorado, Yolo, Placer, Sacramento, Siskiyou, and Fresno Counties remain negative. (Cal. Coop. Rpt.).

WHITEFRINGED BEETLES (Graphognathus spp.) - SOUTH CAROLINA - G. leucoloma striatus collected from aster in parking area of restaurant in Barnwell, Barnwell County, August 3 by P.W. Langford. LOUISIANA - G. leucoloma fecundus collected from goldenrod on railroad property at Joyce, Winn Parish, August 8 by L.L. Sandoz. Determined by V.H. Owens. Confirmed by R.E. Warner. These are new county and new parish records. (PP).

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap (BL = blacklight, I = incandescent, MV = mercury vapor, O = other)	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 8/25-31			BL		2			5	6	17						3			3	81	10	4	1	
IOWA																								
Beaconsfield 8/18-24			BL	23														4	366					
Castana 8/18-24			BL																22					
Wapello 8/18-24			BL	14															110					
KANSAS																								
Garden City 8/28,30			BL	3			7			18								11	24			9		
Hiawatha 8/28			BL	4			20			12							100	1	4					
Wichita 8/30			BL				2										8		4		1	1		
KENTUCKY																								
Bowling Green 8/24,29			BL																8			8		
Lexington 8/14,28			BL												7									
MICHIGAN																								
Adrian 8/23-29			BL														340		57					
Maybee 8/21-27			BL														529		24					
Shelby 8/20-26			BL														21		286					
MISSISSIPPI (County)																								
Washington 8/25-31			2BL	35	1			12	56	193						1			2	109	12	4	8712	
MISSOURI																								
Portageville 8/25-31			BL	11						53							69	1	35		32	11		
NEBRASKA																								
North Platte 8/31			BL																8					
Scottsbluff 8/30			BL				19			35					9			34	34					
NEW JERSEY															(spp.)									
Halltown 8/24-30			BL	22						13					137		11	35	213		12	10		
Hammonton 8/24-30			BL	55						11					14		14	98	245		38	17		
Seabrook 8/24-30			BL	51											23		17	71	137		64	29		
OHIO																								
Wooster 8/25-31			BL	66						2							178	56	88		45	2	2	

LIGHT TRAP COLLECTIONS

	Temperature °F	Precipitation (inches)	Type of trap (BL = blacklight, I = incandescent, MV = mercury vapor, O = other)	Agrotis ipsilon (black cutworm)	Estigmene acrea (salt marsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commiralis (alfalfa webworm)	Loxostege sentalis (garden webworm)	Loxostege sticticalis (beet webworm)	Maduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellow-striped armyworm)	Trichoplusia ni (cabbage looper)	Crops
OREGON (County)																								
Lane 8/25-30			BL	1																				
Marion 8/24-30			BL	5													13							
Multonomah 8/24-30			BL														1							
PENNSYLVANIA (District)																								
Central 8/22-30			BL	3	15											3	1	6						
Southeast 8/22-30			BL	26	14									1		31	7	217			15			
Southwest 8/22-30			BL	3												5	3	9						
SOUTH DAKOTA (County)																								
Brookings 8/22-25			BL	2			14									106	5	19						
TENNESSEE (County)																								
Dyer 8/25-9/1			BL	22	1			10	2	21					4	13		36			12			
Franklin 8/25-9/1			BL						1	12				1	1	2		11						
Madison 8/25-9/1			BL	3	1			3	2	7				1	1	11		47			17			
TEXAS																								
Waco 8/31			BL	32				72		108							11	48		9	11	649		
VIRGINIA																								
Holland 8/23-25			BL	7							40			2		143		31						
Montgomery 8/24-30			BL	4						6				1	1	32		6						
Warsaw 8/23-29			BL	4							34			22	7	50		37						
WISCONSIN																								
Hartford 8/22-28			BL													6		19						
Lancaster 8/21-27			BL	1						2						48	14	7						
Mazomanie 8/23-29			BL													91	4	6						

DETECTION

New State Records - A CHRYSOMELID BEETLE (Galeruca rudis) - SOUTH DAKOTA - Harding County. (p. 599). A SPIDER MITE (Eurytetranychus buxis) - PENNSYLVANIA - Dauphin County. (p. 604).

New County and Parish Records - BANDEDWING WHITEFLY (Trialeurodes abutilonea) ALABAMA - Baldwin, Escambia (p. 601). EUROPEAN CORN BORER (Ostrinia nubilalis) KANSAS - Trego (pp. 598-599). EUROPEAN EARWIG (Forficula auricularia) MICHIGAN - Beulah (p. 604). EUROPEAN PINE SAWFLY (Neodiprion sertifer) SOUTH DAKOTA - Perkins, Todd (p. 605). FACE FLY (Musca autumnalis) GEORGIA - Meriwether (p. 605). A LACE BUG (Stephanitis takeyai) PENNSYLVANIA - Wayne (p. 604). WESTERN CORN ROOTWORM (Diabrotica virgifera) MICHIGAN - Barry, Kent, Ionia, Eaton, St. Joseph (p. 598). WHITEFRINGED BEETLES (Graphognathus spp.) SOUTH CAROLINA - Barnwell. LOUISIANA - Winn (p. 607).

Weather of the week continued from page 596.

Plains. As the weekend approached, thunderstorms were widespread from the upper Great Lakes to the southern Great Plains. Also, a tropical depression was shaping up off the Carolina coast and a low was forming in the eastern part of the Gulf of Mexico. A cold front pushed into the northern Great Plains as the weekend approached. The leading edge of cold air set off showers and thunderstorms. Light rains, 2 to 4 inches in 24 hours, fell in east-central Kansas Friday and Saturday causing substantial flooding along Gypsum Creek and Turkey Creek and tributaries of the lower Smoky Hole River. Flooding also occurred in south-central New Mexico due to heavy showers in that area. Meanwhile, tropical storm Carrie was dumping heavy rainfall in eastern Massachusetts -- 8 inches southwest of Hyannis Port and over 5 inches at Chatham in 6 hours. Weekly totals at spots in Massachusetts exceeded 10 inches.

TEMPERATURES: High pressure extending from California to the Appalachians and from the Great Lakes to the Gulf of Mexico early in the week brought comfortable temperatures and lower relative humidity to much of the Nation. Onshore breezes cooled the Pacific Northwest. Lewiston, Idaho, registered 102 degrees Monday but no higher than 84 degrees Wednesday. Hot, muffy air still covered the South and East. At midweek, a cold front pushed from Canada across the Great Lakes region. It brought cooler, drier air to the Northeast but oppressive summer heat continued in the South. Pleasant weather followed the frontal passage as it moved southward and eastward. Another front pushed into the northern Great Plains as the weekend approached. Temperatures fell into the 30's in northern Minnesota and below freezing in the central Rockies. Afternoon temperatures in the 60's were common Thursday and Friday over the northern Great Plains after the frontal passage. Cool air spread southward and eastward bringing a touch of autumn to much of the Nation. Elkins, West Virginia, recorded 54 degrees Sunday morning. This is 12 degrees below normal. Parts of the central Great Plains averaged 5 to 11 degrees cooler than normal.

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HYATTSVILLE, MARYLAND 20782

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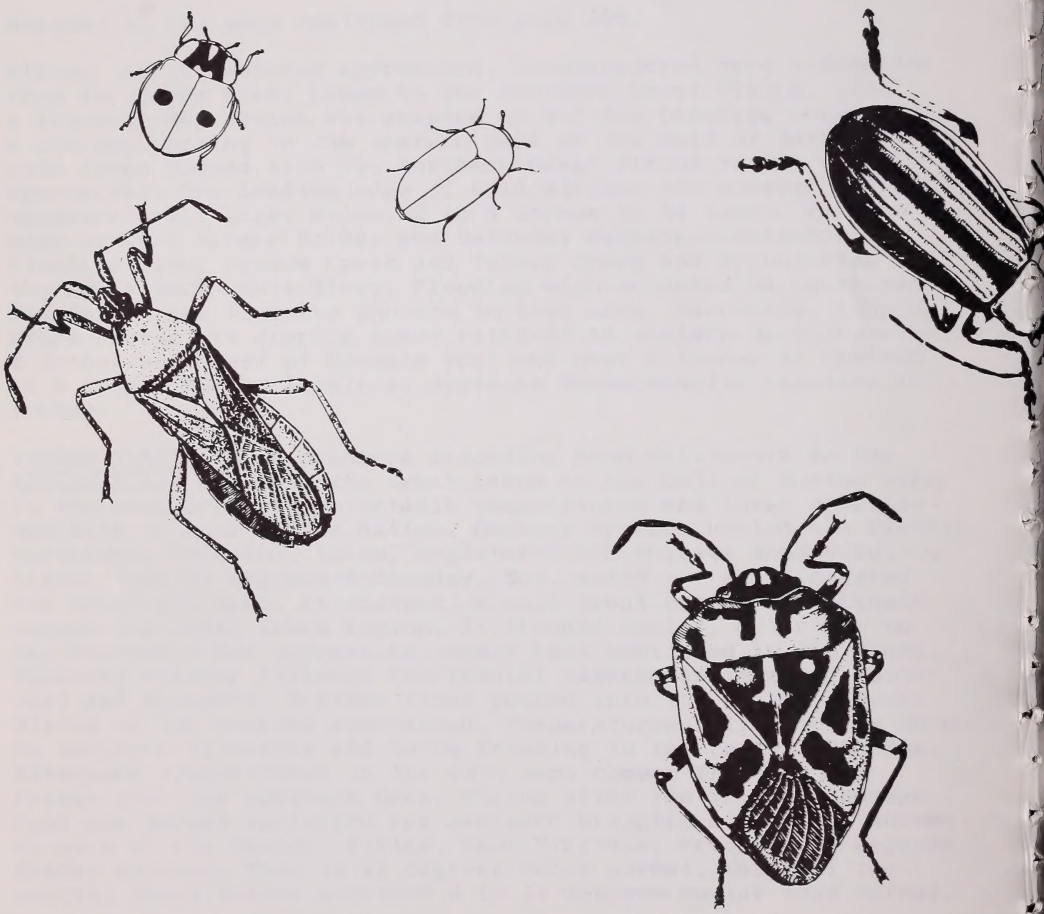
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